

REMARKS

The Office Action mailed June 17, 2004, and subsequent Advisory Action, have been reviewed and carefully considered. Claims 1-15 remain pending, of which the independent claims remain 1-3. Claims 1-4, 8, 10 and 11 have been amended.

Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

Claims 1-3 stand rejected under 35 U.S.C. 102(e) as anticipated by U.S. Patent No. 6,341,040 to Tai et al. ("Tai").

Claim 3 recites:

demultiplexing, by said demultiplexer, said interleaved optical signals received from the respective said predetermined channel into a prescribed number of channels; multiplexing, by said multiplexer, said demultiplexed optical signals received from the respective said prescribed channel of said demultiplexer; deinterleaving said multiplexed optical signals into one transmission channel to be forwarded to a next node; and, providing the interleaver with an output terminal without forward connection

The Tai reference fails to disclose or suggest the above-quoted feature of claim 3.

For example, although Tai FIG. 8 discloses an interleaver 800 with output terminals without forward connection, FIG. 8 fails to show a multiplexer or demultiplexer. On the other hand, Tai FIG. 10 shows a multiplexer and demultiplexer,

but fails to show “an output terminal without forward connection” which language explicitly appears in present claim 3.

This latter-quoted limitation of claim 3, and others, the Examiner acknowledges are not disclosed or suggest in Tai.

The Examiner suggests, however, that the instant invention would have been obvious to one of ordinary skill in the art.

The Office Action does not specify how Tai is to be modified.

Presumably, the Examiner is in the position of suggesting that Tai FIG. 8 be implemented for multiplexing/demultiplexing according to Tai FIG. 10, and that, additionally, one of the demuxes 1035, and possibly the mux 1045, be eliminated, while leaving the respective output terminal from interleaver 1020.

Problematically, however, eliminating parts of an embodiment while retaining the functionality is non-obvious.

Note that the omission of an element and retention of its function is an indicia of unobviousness. *In re Edge*, 359 F.2d 896, 149 USPQ 556 (CCPA 1966). MPEP 2144.04(2)(B).

To avoid this reality, the Examiner characterizes the difference of the present invention over the prior art as amounting to “mere duplication of the essential working parts.” It is assumed, therefore, that the Examiner is starting with a smaller Tai

embodiment, and attempting to use “mere” duplication to achieve an embodiment resembling the present invention.

At best, however, the Examiner envisions selective duplication coupled with selective omission, and whatever else is needed to deliver a working embodiment. Motivation for these modifications, and the modifications themselves, are not to be found in what was generally known to those of ordinary skill in the art. Instead, the modifications, and motivation for such, arise straight from the present applicants’ disclosure.

Tai discloses a number of alternative configurations of an optical system that demultiplexes optical signals to optical devices and multiplexes optical signals from the devices, those multiplexers and demultiplexers being sandwiched between respective interleavers and de-interleavers.

One configuration (FIG. 10) for a Tai interleaver 1020 interleaves an incoming optical signal onto two optical fibers 550, 597, each of the fibers then feeding a respective demultiplexer 1030, 1035. Although FIG. 10 depicts the interleaver 1020 as having merely two filters 530, 580, which constitute a single stage of interleaving, Tai states that, alternatively, the interleaver 1020 may be configured with multiple stages of interleaving (col. 6, lines 56-64). Thus, for example, the package 557 housing the interleaver 1020 could be designed to instead contain the three filter pairs 810, 820, 830,

thereby affording two stages of interleaving.

It can only be assumed, based on Tai, that both of the Tai output fibers 550, 597 are necessarily connected to their respective demultiplexers 1030, 1035, because, otherwise, half of the input signal channels, e.g., the odd channels, would be discarded.

Likewise, with two stages of de-interleaving, all of the output fibers 840, 850, 860, 870 must be connected to respective demultiplexers. Otherwise, input information would be discarded.

Perhaps the Office Action envisions merely a single stage of interleaving, but that some of output optical fibers 840, 850, 860, 870 jut into the deinterleaver 80 disconnected to any filter 200 or demultiplexer 1030, 1035. This configuration would introduce, upon upgrade to activate the disconnected fiber(s), the problem of properly aligning the fiber seat 245 with the GRIN lens 240 or of properly seating the fiber 250 into the fiber seat 245.

Item 2 of the Office Action speculates that the invention as recited in claim 3 amounts to “mere duplication of the essential working parts of a device,” but, as demonstrated above, one cannot merely duplicate the essential working parts of Tai to arrive at the present invention.

For at least the above reasons, the cited reference fails to render obvious the invention as recited in claim 3. Reconsideration and withdrawal of the rejection are

respectfully requested.

Claims 1 and 2 have now been amended -- not because amendment would be needed to distinguish patentably over Tai, but merely to emphasize inventive aspects over the prior art of record. The amendment of claims 1 and 2 finds support in the specification (e.g., [0020], [0021]).

Tai, by contrast, fails to disclose or suggest a system that features at least one multiplexer/demultiplexer pair, “wherein the preliminary output terminal is without forward connection” which language specifically appears in claim 1.

Claim 2 is similar to claim 1 and features the same distinguishing language.

As to the other rejected claims, each depends from one of the base claims and is deemed to be patentable at least due to its dependency. However, each defines another aspect of the invention, and warrants further consideration based upon its additional, individual merits.

In view of the foregoing amendments and remarks, it is believed that this application is now in condition for allowance. The Examiner is invited to contact the undersigned in the event of any perceived outstanding issues so that passage of the case to issue can be effected without the need for a further Office Action.


Amendment
Serial No. 09/748,430

Docket No. 5000-1-182.

In the event that any additional fee is required to continue the prosecution of this Application as requested, please charge such fee to Deposit Account No. 502-470.

Respectfully submitted,

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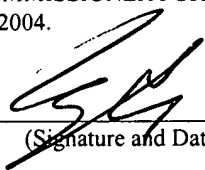
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